Panasonic

TX–32PB50F
TX–28PB50F

Colour Television

[tau]
FLAT
DIGITAL

Operating Instructions

Welcome

Dear Panasonic Customer,
We hope that you have many years of enjoyment from your new TV. The ***Quick Start Guide*** section at the beginning of this instruction book will allow you to use the TV as quickly as possible. We recommend that you then read the complete instruction book, and keep it to refer to as you explore the range of advanced features that this TV offers.

MADE FROM
100% RECYCLED PAPER

NORDIC ECOLABEL
244 039
Printing paper
Low emissions during production

This TV has a low power consumption making it very cost effective to run. Also, when in Standby mode the power consumption is merely 2.8W.
This instruction book is produced using recycled paper, made from 100% Post–consumer waste pulp. De–inked without bleaching. Free from optical brightening agents (OBA).

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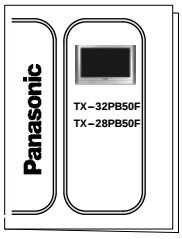
Accessories

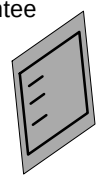
Check that you have the accessories and items shown ☐

☐ Operating Instruction book
TQB8E3342



☐ Remote Control Transmitter
EUR511224

☐ TV Guarantee



☐ Batteries for the Remote Control Transmitter.
(2 x R6 (UM3) size)

Warnings and precautions

- This TV set is designed to operate on A.C. 220 – 240V, 50Hz.

- To prevent damage which might result in electric shock or fire, do not expose this TV set to rain or excessive moisture. This TV must not be exposed to dripping or splashing water and objects filled with liquid, such as vases, must not be placed on top of or above the TV.

- **WARNING : HIGH VOLTAGE !!!**
  Do not remove the rear cover as live parts are accessible when it is removed. There are no user serviceable parts inside.

- **TV Games / Home Computers**
  Extended use of TV games or home computers with any television set can cause a permanent 'shadow' on the screen. This type of irreversible picture tube damage, can be limited by observing the following points:
  - Reduce the brightness and contrast levels to a minimum viewing level.
  - Do not operate the television set for a continuous period of time while using TV games or home computers.
  - This type of picture tube damage, is not an operating defect, and as such is not covered by the Panasonic warranty.

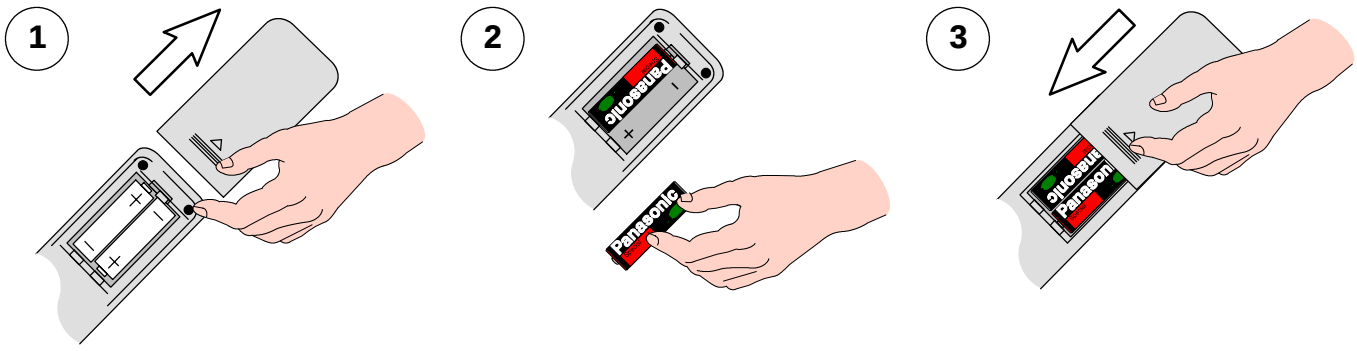
- The ***On*** / ***Off*** switch on this model does not fully disconnect the TV from the mains supply. Remove the mains plug from the wall socket when the TV set is not used for a prolonged period of time.
  Note:
  - If the set is not switched off when the TV station stops transmitting, it will automatically go to standby mode after 30 minutes. This function will not operate when the TV is in AV mode.

- **Cabinet and picture tube care**
  Remove the mains plug from the wall socket. The cabinet and picture tube can be cleaned with a soft cloth moistened with mild detergent and water. Do not use solutions containing benzol or petroleum. TV sets can produce static electricity, care must be taken whenever touching the TV screen.

- Adequate ventilation is essential to prevent failure of electrical components, we recommend that a gap of at least 5cm is left all around this television receiver even when it is placed inside a cabinet or between shelves.

- Avoid exposing the TV set to direct sunlight and other sources of heat.

Fitting remote control batteries



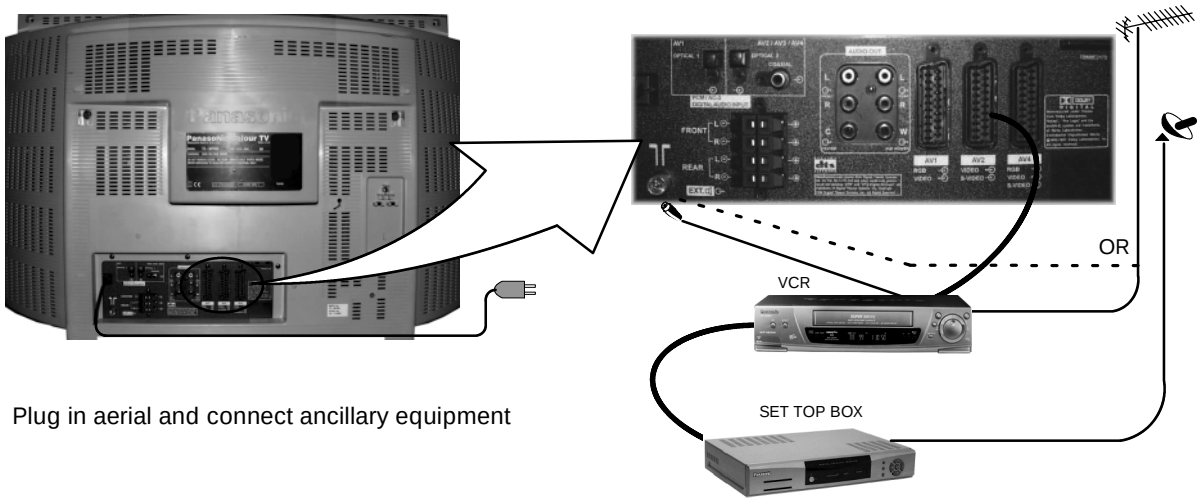
Slide off the battery cover

Insert batteries – note correct polarity (+ and –)

Replace the cover

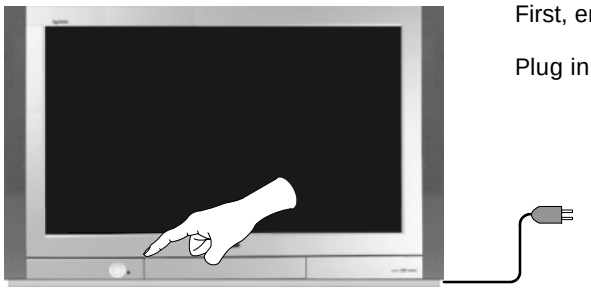
- Make sure that the batteries are fitted the correct way round.
- Do not mix old batteries with new batteries. Remove old, exhausted batteries immediately.
- Do not mix different battery types, i.e. Alkaline and Manganese or use rechargeable (Ni–Cad) batteries.

1



Plug in aerial and connect ancillary equipment

2



First, ensure that the VCR is in ***Standby*** mode

Plug in TV and switch on

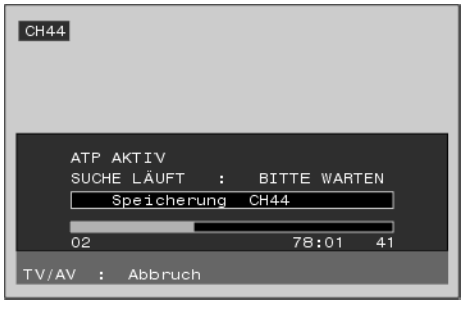
3

Select your country

For Switzerland and Belgium, select the desired language

Press the red button

4



Auto setup will begin, your stations will be located and stored.

If a compatible VCR is connected to the AV2 socket, programme data will be downloaded to the VCR via Q–Link. See page 20.

5 Once ***Auto setup*** is complete, if you are installing a new Q–Link compatible VCR, you can now switch it ***On***. Downloaded tuning data will match the television's. Not all VCRs suport this download of programme information, some may require to be started manually. See the VCR instruction book for details.

- If the VCR has not accepted download data from the TV, you may need to select the download option from the VCR's menu.
- If ***Q–Link*** is not operating correctly, check it is connected to the television's AV2 socket, the SCART lead is a "full function" type, and the VCR is compatible with Q–Link, NEXTVIEWLINK or similar technologies. Ask your dealer for further details.
- For further information on ***Q–Link*** and connecting equipment, see pages 20, 27 and 28.

6 We recommend that as soon as the ***Auto setup*** feature is completed, the picture controls are reset to normal viewing levels. To do this, press the "***N***" button, found under the remote control's pull down flap.

7 Slight tilting of the picture may be noticeable, the Geomagnetic Correction feature can be used to eliminate this, if necessary:

First, ensure the ***Auto setup*** and ***Q–Link*** download procedures are complete. The screen should not be showing any On Screen Display menus.

Using the remote control keys indicated, access the ***Geomagnetic Correction*** menu option and follow the procedure below (for a full explanation of the On Screen Display menu system see page 7) :

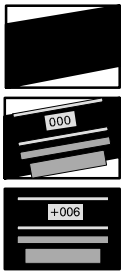
Press the ***SETUP*** menu button

Move to the ***Geomagnetic*** menu option

Access the ***Geomagnetic*** menu

Adjust the picture tilt as necessary

Press the TV/AV button to exit the ***SETUP*** menu



8 If you wish to connect external amplifiers and speakers, see pages 29 and 30.

9 If you do not wish to connect any external amplifiers and speakers at all, we recommend that you switch ***Surround*** sound ***Off.*** The sound output will then be two channel (ie: left and right) stereo or mono.
With the ***Surround*** feature switched off some additional features become available in the ***SOUND*** menu, see page 9.

Press the ***Surround*** button to switch between ***On*** and ***Off***

Note:

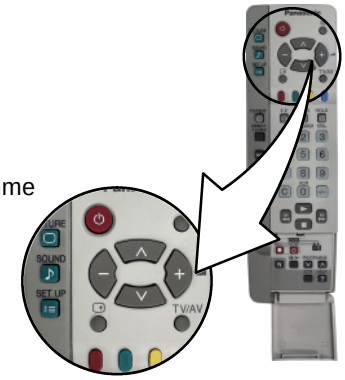
- Accessing the ***Surround*** menu (via the ***SOUND*** menu) automatically switches the ***Surround*** feature ***On.***

10 You are now ready to begin viewing programmes

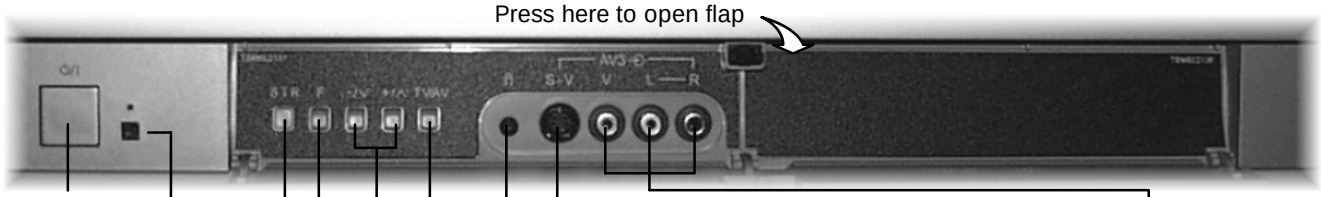
The cursor controls provide the two basic functions:

Adjust Volume

Change Programme



Basic controls: front panel and remote control



MAINS Power
On / ***Off*** switch

Red light indicates ***Standby*** mode. When using the remote control, indicates the TV has received a command

STR (Normalisation store)
Used to store tuning and other function settings

F (Function select)
Displays the On Screen Display functions, use repeatedly to select from the available functions – ***Volume***, ***Contrast***, ***Brightness***, ***Colour***, ***Sharpness***, ***Tint*** (in ***NTSC*** mode), ***Bass***, ***Treble***, ***Balance***, ***Tuning*** and ***Geomagnetic Correction***

TV/AV switch (see page 27)

Headphone socket (see page 27)

S–VHS socket (see page 27)

RCA Audio/Video sockets (page 27)

Increases or decreases the programme position by one. When a function is already displayed, press to increase or decrease the selected function. When in ***Standby*** mode, switches TV ***On***

Standby On / ***Off*** switch
Switches TV ***On*** or ***Off*** standby

Menu buttons
Press to access the ***PICTURE***, ***SOUND*** and ***SETUP*** menus (see page 7)

Status button
Press to display programme position, programme name, channel number, time, ***MPX*** mode, ***Scan*** mode, Receiving system, ***ASPECT*** mode and programme table

Teletext buttons (see page 22)

Direct TV Record button (see page 20)

Surround On / ***Off*** (see page 25)

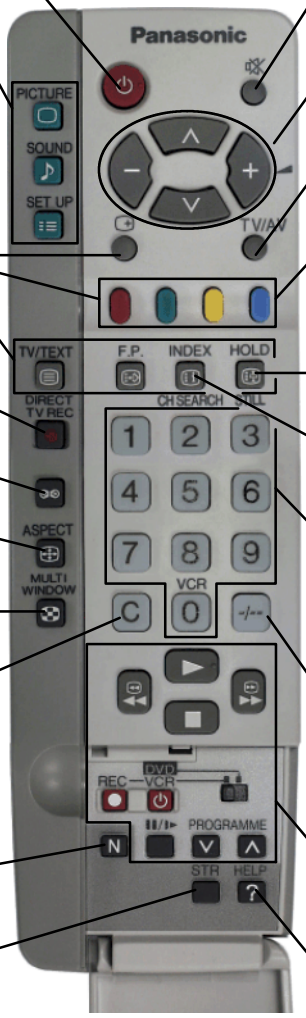
ASPECT control button (see page 16)

MULTI WINDOW button (see page 18)

Direct channel access
During normal TV viewing or when in the ***Tuning***, ***Programme edit*** or ***Manual tuning*** menus, press and then enter channel number using the numeric buttons

N (Normalise) button
Resets all settings to their default levels

STR (Normalisation store)
Stores some current settings as the normalised settings in ***PICTURE*** and ***SOUND*** menus. Stores some settings in ***Tuning*** and ***Programme edit*** menus, confirms start of ***Auto setup***



Sound mute ***On*** / ***Off***

Cursor buttons to make selections and adjustments

Switch between viewing TV or AV input (see page 27)

Coloured buttons used for
Aspect functions (see page 16)
Programme edit functions (see page 12)
Teletext functions (see page 22)
AV selection (see page 27)
MULTI WINDOW functions (see page 18)

STILL button (see page 19)

Channel search button (see page 19)

Programme / channel change buttons (0–9) and Teletext page buttons (see page 22).
When in ***Standby*** mode, switches TV ***On***

Programme position for selection of two digit programmes (10–99) using numeric buttons

VCR / DVD buttons (see page 21)

The ***HELP*** button provides a demonstration of On Screen Display menus

Many features available on this TV can be accessed via the On Screen Display menu system. Use the remote control as shown below to access and adjust features as desired.

The ***PICTURE***, ***SOUND*** and ***SET UP*** buttons are used to open the main menus and also to return to the previous menu

The up and down cursor buttons are used to move the cursor up and down the menus

The left and right cursor buttons are used to access menus, adjust levels or to select from a range of options

The ***STR*** button is used with a number of features to store settings after adjustments have been made or options have been set

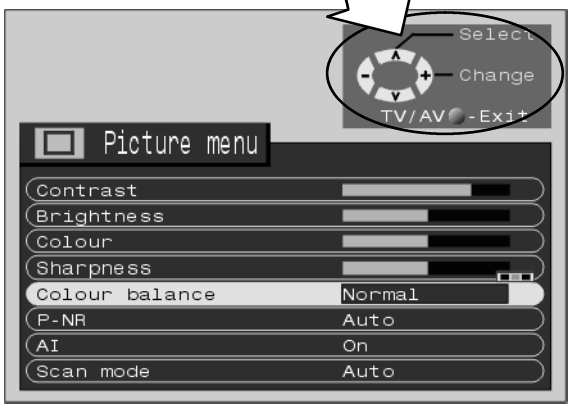
The ***TV/AV*** button is used to exit the menu system and return to the normal viewing screen

An On Screen Help box is displayed whenever a menu is displayed on the TV. This Help box indicates which keys on the remote control are used to navigate the menu shown, see above for descriptions of button functions.

Note:

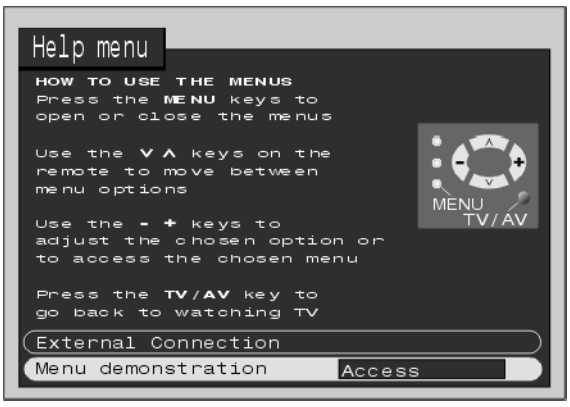
D The Help box is not shown in the menu pictures in this instruction book due to space limitations.

ON SCREEN HELP 'Instructions' box



The ***HELP*** button runs a demonstration of the menus available.

Press the ***HELP*** button and select one of the options


Help menu
HOW TO USE THE MENUS
Press the MENU keys to open or close the menus
Use the V ^ keys on the remote to move between menu options
Use the - + keys to adjust the chosen option or to access the chosen menu
Press the TV/AV key to go back to watching TV
MENU
TV/AV
External Connection
Menu demonstration
Access

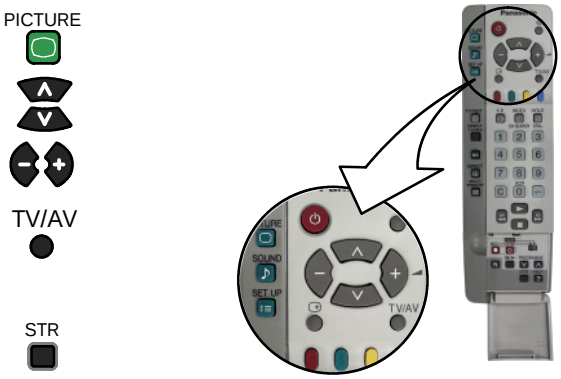
Press the ***PICTURE*** menu button

Move to chosen menu option

Adjust chosen option or access chosen menu

Press the ***TV/AV*** button at any time to go back to watching TV

Pressing the ***STR*** button after having adjusted a feature will store the setting as the default (replacing the factory setting).

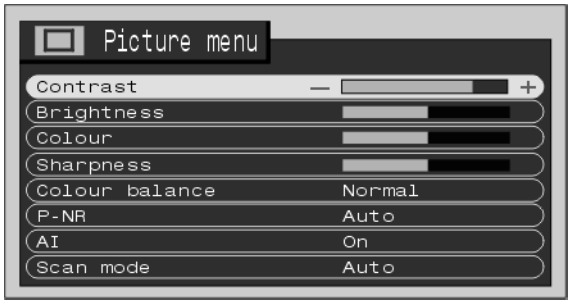


Contrast
Brightness
Colour
Sharpness

Increase or decrease the levels of these options according to your personal preference.

Tint

With an NTSC signal source connected to the TV, the picture hue can be adjusted to suit your taste.

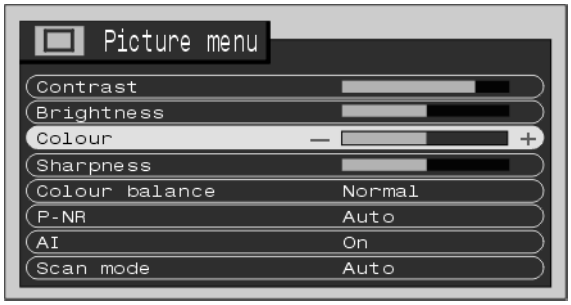


Colour balance

Allows you to set the overall colour tone of the picture. Choose from ***Cool***, ***Normal*** and ***Warm***.

P–NR

Automatically reduces unwanted picture noise.



AI

Automatically analyses the incoming picture and processes it to give improved contrast and optimum depth of field.

Scan mode

Lets you choose the screen refresh method:
in ***Auto*** mode, the TV software will select the best mode for the signal being viewed; ***100Hz*** will give a steady picture for most signal transmission. We recommend that you set ***Scan mode*** to ***Progressive*** when viewing a PAL 60 or NTSC transmission.
When viewing a PAL transmission (other than PAL 60) with ***Scan mode*** set to ***Progressive***, the screen will flicker, this is not a fault.

Note:

- When viewing a PAL transmission (other than PAL 60) with ***Scan mode*** set to ***Progressive***, the screen will flicker, this is not a fault.

Press the ***SOUND*** menu button

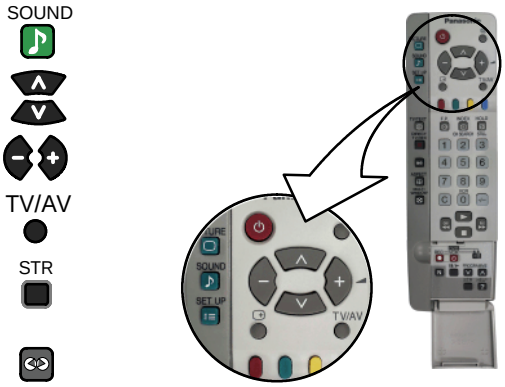
Move to chosen menu option

Adjust chosen option or access chosen menu

Press the ***TV/AV*** button at any time to go back to watching TV

Pressing the ***STR*** button after having adjusted a feature will store the setting as the default (replacing the factory setting).

Some features are only available with the ***Surround*** feature switched off. Press the ***Surround*** button to switch between ***On*** and ***Off***



Volume Lets you set the overall output volume.

Bass Increase or decrease level to enhance or minimise lower, deeper sound output.

Treble Increase or decrease level to enhance or minimise sharper, higher sound output.

Balance With the ***Surround*** feature switched ***Off***, the levels of sound between the left and right speakers can be adjusted to suit your listening position.

Headphone volume Can be adjusted independantly of the TV speakers so that everyone can enjoy listening at a level comfortable for them. When in picture and picture mode, note that the headphones will relay the soundtrack for the programme in the left window (the current programme position). When using one of the other double window features, the soundtrack for the programme in the main window (rather than the smaller window) is relayed.

Subwoofer Choose from ***Off***, ***Normal*** and ***Full***.
Off turns ***Off*** subwoofer output, ***Normal*** provides a mid–level bass output and ***Full*** provides an enhanced bass effect.

MPX Usually set to ***Stereo*** to provide the best reproduction, but if reception deteriorates or if the service is not available then switch to ***Mono***. ***Mono*** (***M1***) and (***M2***) can also be selected if a mono signal is being transmitted.

Mode With the ***Surround*** feature switched ***Off***, sound quality can be improved when watching music or speech by selecting the appropriate mode – ***Music*** or ***Speech***.

Digital Audio 1

Digital Audio 1
If you do not have any digital audio input connected to AV1, set to ***Off***.
If you do have a digital audio input connected to the AV1 Scart socket from external equipment such as a DVD player, ***Digital Audio 1*** lets you turn off the sound input from the AV1 Scart socket. Sound is then provided via an optical cable connected to the optical only digital audio input. See pages 27 to 28 for connection details.

Digital Audio 2

Digital Audio 2
If you do not have any digital audio input connected to AV2, AV3 or AV4, set to ***Off***.
If you do have a digital audio input connected to the AV2, AV3 or AV4 Scart socket from external equipment such as a DVD player, ***Digital Audio 2*** lets you turn off the sound input from the Scart socket. Sound is then provided via the shared optical/coaxial digital audio input. (eg: if you have a DVD player connected to the AV4 socket, with a coaxial or an optical cable connected to provide digital audio input, select AV4). See pages 27 to 28 for connection details.

Surround menu Leads to the ***Surround menu***, where you can alter settings relating to the sound system, as described on pages 25 to 26.

Press the ***SETUP*** menu button

Move to chosen menu option

Adjust chosen option or access chosen menu

Press the ***TV/AV*** button at any time to go back to watching TV.

AV2 out

Offers a choice of signals to send to the AV2 Scart socket. You can choose from the current **TV** programme position, the signal entering ***AV1*** / ***AV3*** / ***AV4*** or ***Monitor*** – the picture displayed on screen.

Teletext

Allows you to choose between ***FLOF*** or ***LIST*** mode. See page 22.

Off timer

Switches the TV off within a preset time which you can choose from between 0 to 90 minutes in 15 minute intervals.

Flicker reduction

Lets you control any picture movement. Set to ***Dynamic*** to activate motion compensation, to smooth the image and get rid of picture movement. Set to ***Normal*** to correct minor picture movement, or if slight ghosting of figures occurs when using the ***Dynamic*** setting. Set to ***Off*** to have no flicker reduction at all, occasional broadcasts may benefit from using this setting.

Q–Link

Allows you to enable or disable data communication between this TV and a compatible VCR. See page 20.

Strobe

Lets you take a series of freeze–frame 'photos' of a piece of action (for example: the finish of a race). See page 19.

Text language

Select character set, so that all characters needed are availabe for text on teletext pages (eg: cyrillic characters, etc).

Mode	Languages
West	English, French, German, Greek, Italian, Spanish, Swedish, Turkish
East1	Czech, English, Estonian, Lettish, Rumanian, Russian, Ukrainian
East2	Czech, English, German, Hungarian, Lettish, Polish, Rumanian

Tuning menu

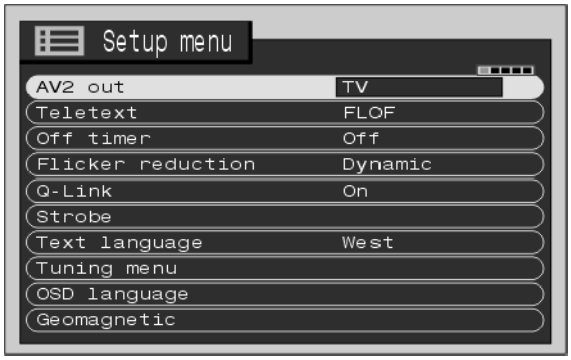
Provides access to many other features including ***Programme edit*** and ***Auto setup***. See page 11.

OSD language

When you first install the TV, the On Screen Display language is set according to your choice of country. ***OSD language*** lets you change the language used for On Screen Displays.

Geomagnetic

If you notice a slight tilt to the picture or if there are coloured patches at the corners of the screen, use this feature to eliminate them. See Step 6, page 5 (Quick Start Guide).



Tuning menu – overview

Press the ***SETUP*** menu button

Move to ***Tuning menu*** option

Access ***Tuning menu***

Move to chosen menu option

Adjust chosen option or access chosen menu

Press the ***TV/AV*** button at any time to go back to watching TV

Pressing the ***STR*** button after having adjusted some features will store the setting as the default (replacing the factory setting).

Programme edit Access in order to customise your programme settings (eg: adding or deleting a programme position) See page 12.

Auto setup Allows you to automatically retune the TV. Useful if you move house and wish to retune your TV to the local stations. See page 14.

Manual tuning Allows individual programme positions to be tuned manually. See page 15.

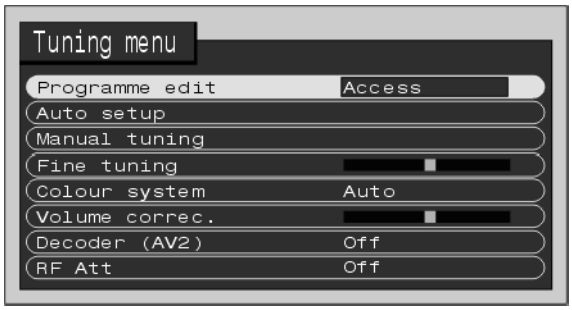
Fine tuning Use to make small adjustments to the tuning of an individual station (useful for example when weather conditions are affecting reception quality of a programme).

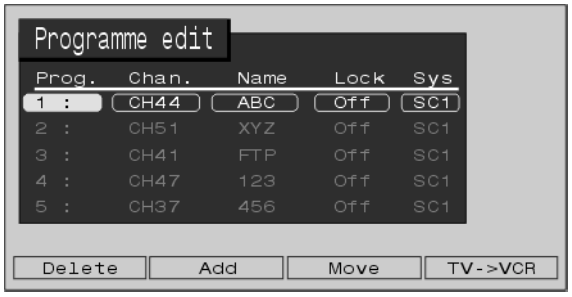
Colour system Lets you select the correct transmission standard for the transmission signal being received.

Volume correc. Lets you adjust the volume level of individual stations. Use this feature if the volume level varies significantly between stations. Adjusting one station's volume to bring it into line with the other stations means you can avoid having to adjust the volume each time you change channels.

Decoder (AV2) This option is used when a decoder is connected via AV2. Store the setting as ***On*** so that every time this programme position is selected, the TV software is set to handle the decoded information (this is important if your decoder unit is connected to AV2 via a Q–Link VCR).

RF Att When a strong signal (such as a cable signal) is received, sometimes two channels transmitted close together interfere with each other's picture (this is the 'beat' you see on the picture). Set this option to On to 'damp down' the strength of the signal for the current programme position, so eliminating the 'beat'. Store the setting as On so the signal is 'damped' every time this programme position is selected.





Tuning menu – Programme edit

Press the ***SETUP*** menu button

Move to ***Tuning menu*** option

Access ***Tuning menu***

Move to ***Programme edit*** option

Access ***Programme edit***

Move to chosen programme position (eg: Prog. 3)

Make required change, eg: renaming a programme channel (see the relevant procedure below)

Press the ***TV/AV*** button at any time to go back to watching TV

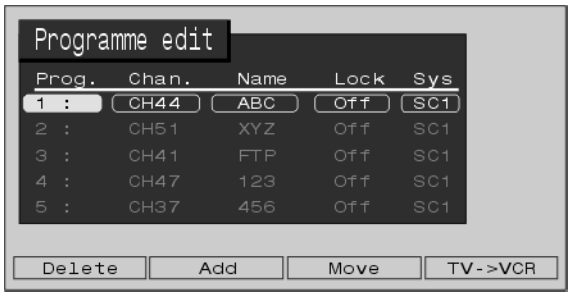
Pressing the ***STR*** button after having adjusted some features stores the change made

Adding / deleting a programme channel

Make sure the cursor is in the ***Prog.*** column

Press the green button to add a programme channel to the programme position, or the red button to delete one

Press the same button again to confirm your decision



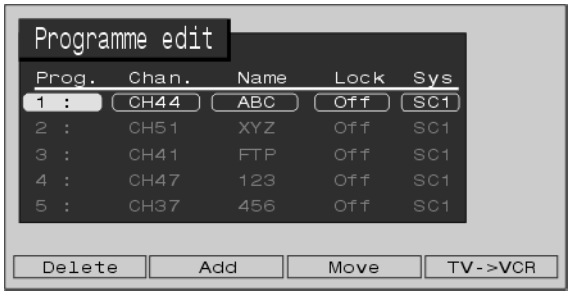
Moving a programme channel

Make sure the cursor is in the ***Prog.*** column

Press the yellow button

Choose the new position for the programme channel

Press the yellow on screen selector key again to confirm your decision

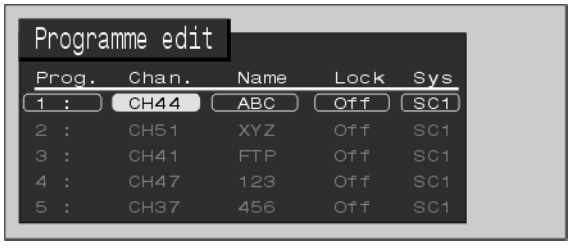


Tuning a programme channel

Move to the ***Chan.*** column

Increase or decrease the programme channel number (you will see the TV retune to the new number as you change it) or use the ***C*** button for Direct Channel Access (see page 6)

Press ***STR*** to store this change


Programme edit
Prog. Chan. Name Lock Sys
1 : CH44 ABC Off SC1
2 : CH51 XYZ Off SC1
3 : CH41 FTP Off SC1
4 : CH47 123 Off SC1
5 : CH37 456 Off SC1

Renaming a programme channel

Move to the ***Name*** column

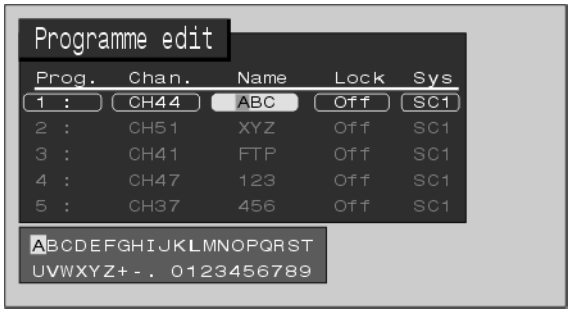
Choose the new character. The box at the bottom of the screen shows the character currently selected.

Move to the next character position

Continue until renaming is done

Press ***STR*** to store the new name

STR


Programme edit
Prog. Chan. Name Lock Sys
1 : CH44 ABC Off SC1
2 : CH51 XYZ Off SC1
3 : CH41 FTP Off SC1
4 : CH47 123 Off SC1
5 : CH37 456 Off SC1
ABCDEFGHIJKLMNOPQRST
UVWXYZ+-. 0123456789

Locking a programme channel

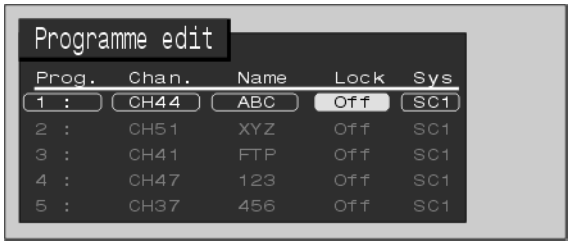
You may wish to lock a programme channel to prevent access to it

Move to the ***Lock*** column

Choose between Lock ***On*** or Lock ***Off***

Press ***STR*** to store the new setting

STR


Programme edit
Prog. Chan. Name Lock Sys
1 : CH44 ABC Off SC1
2 : CH51 XYZ Off SC1
3 : CH41 FTP Off SC1
4 : CH47 123 Off SC1
5 : CH37 456 Off SC1

Note:

D When a programme position is locked, Direct Channel Access using the ***C*** and numeric buttons on the remote control is not available

Changing the sound system for a channel

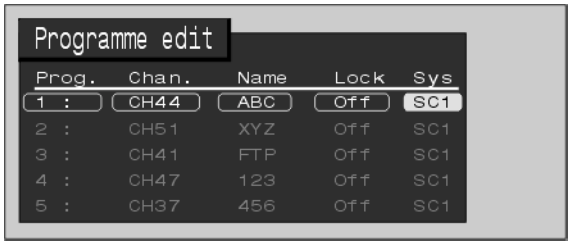
You can change the sound system used for a programme channel

Move to the ***Sys*** column

Choose the required sound system:
SC1 : PAL B, G, H / SECAM B, G
SC2 : PAL I
SC3 : PAL D, K / SECAM D, K
F : SECAM L/L'

Press ***STR*** to store the new setting

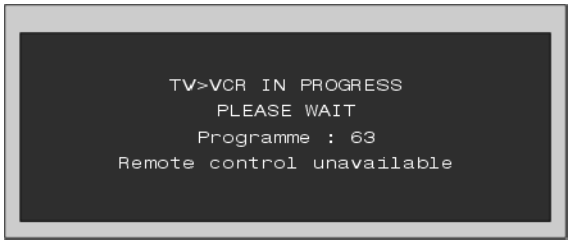
STR


Programme edit
Prog. Chan. Name Lock Sys
1 : CH44 ABC Off SC1
2 : CH51 XYZ Off SC1
3 : CH41 FTP Off SC1
4 : CH47 123 Off SC1
5 : CH37 456 Off SC1

Copying programme information to a VCR

You can copy programme information to a compatible VCR connected to AV2 (see page 28 for connection information)

Press the blue button.
Programme data will now be sent to the VCR. This might take a few seconds, depending on the number of stations stored. If the message "Unable to download, check your VCR" appears on the screen, the television is unable to send the programme information to the VCR. See the VCR instruction book for further information.



Tuning menu – Auto setup

Auto setup automatically retunes your TV. This feature is useful if, for example, you move house and wish to retune your TV to receive the local stations.

Press the ***SETUP*** menu button

SET UP

Move to ***Tuning menu*** option

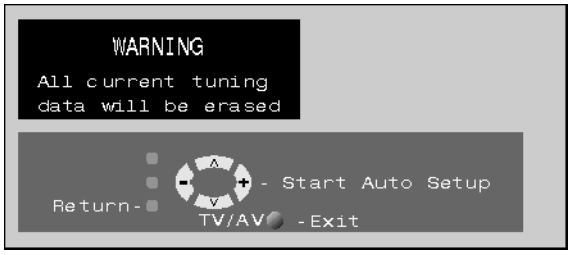
Access ***Tuning menu***

Move to ***Auto setup***

Access ***Auto setup***

Press to confirm start

Select your country



Note:

D ***If you proceed with the next step all tuning data will be erased*** (all stations and their programme positions stored in your TV's memory will be wiped out so the new settings can be stored).

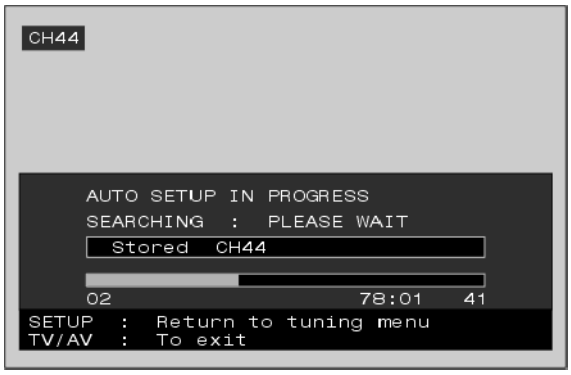
If you exit the procedure after this point and before ***Auto setup*** is complete, no station information will be stored. Restart and complete the Auto setup procedure so that the TV is retuned.

Press to start ***Auto setup***

The TV will search for, locate, store and then sort into order your local stations.

If a compatible VCR is connected via the AV2 socket, programme data will be sent to the VCR via Q-Link (see page 20).

Once this operation is completed the TV will display the programme now stored on programme position 1.



Press the ***TV/AV*** button at any time to go back to watching TV (please read the ***Note*** in the above procedure)

TV/AV

Tuning menu – Manual tuning

It is possible to retune individual programme positions:

Press the ***SETUP*** menu button

SET UP

Move to ***Tuning menu*** option

Access ***Tuning menu***

Move to ***Manual tuning***

Access ***Manual tuning***

Select the programme position to be tuned

Press repeatedly until required station is found

When the desired station is found, press ***STR*** to store. The programme position will flash

STR

Press the ***TV/AV*** button at any time to go back to watching TV

TV/AV

Manual tuning (via front panel)

It is also possible to use the control panel buttons on the front of your TV to tune individual programme positions:

Press the ***F*** button (Front panel) until ***Tuning mode*** is reached

F

Press the **–** or **+** button to access ***Tuning mode***

–/v –\^

Press the TV/AV button to move between ***Change programme***, ***Search*** and ***Change TV system***

TV / AV

Press the **–** or **+** button to change programme position or start search

–/v –\^

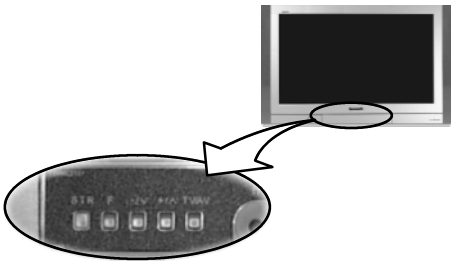
When the desired station is found, press ***STR*** to store. The programme position will flash

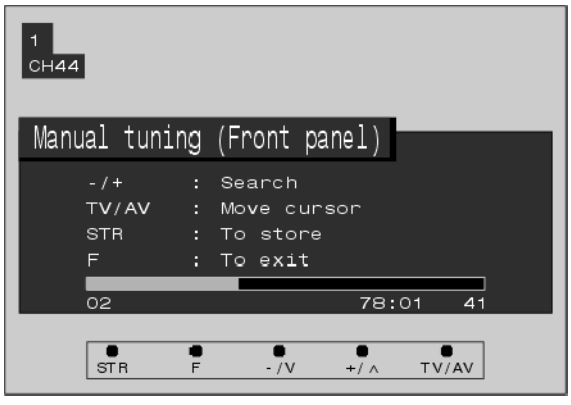
STR

Repeat above procedure to tune additional programme positions

Press the ***F*** button at any time to go back to watching TV

F





Aspect controls

Press the ***ASPECT*** button to move through the six aspect options: ***Panasonic Auto***, ***4:3***, ***Zoom***, ***S–Zoom***, ***16:9*** and ***Just***.

ASPECT

Notes:

- If you leave Aspect set to ***Panasonic Auto,*** the TV software determines the best ratio for each programme viewed. In order not to disrupt your viewing, no mode information is displayed while this is happening (eg: a programme may begin in ***4:3*** mode then seem to jump into ***Just*** mode). Simply press the ***ASPECT*** button to display mode information in the top left of the screen.
- A 16:9 picture has been used to illustrate all of the aspect modes described in this section.

The on screen selector keys (corresponding to the four coloured buttons on the remote control) that appear for some Aspect functions clear after a few seconds. If you want to select an operation when the keys are not shown, press the ***ASPECT*** button once more and the keys will reappear.

Panasonic Auto

Panasonic Auto determines the best aspect ratio to use to display the picture you are viewing. It does this using a four step process to determine if the picture being viewed is a widescreen picture.

If ***Panasonic Auto*** detects a widescreen signal it switches into ***16:9*** widescreen mode. If ***Panasonic Auto*** does not detect a widescreen signal then the picture is displayed in ***Just*** or ***4:3*** mode.

The text shown on the screen indicates how ***Panasonic Auto*** determined which ratio to use:

'WIDE' appears in the top left of the screen if a widescreeen identification signal (WSS) is found or a signal is found through a Scart socket. ***Panasonic Auto*** switches into ***16:9*** widescreen ratio.

'Panasonic Auto' appears in the top left of the screen if black stripes above and below the picture are detected. ***Panasonic Auto*** chooses the best ratio and expands the picture to fill the screen. This process can take several minutes, depending how dark the picture is.

'Panasonic Auto' appears in the top left of the screen and red and green keys at the bottom if no indication of a widescreen signal is found, the picture is displayed in ***Just*** or ***4:3*** mode. If the picture has a standard 4:3 aspect ratio then you may prefer to view it at its original size, the red and green keys that appear allow you to choose between viewing at standard **4:3** size or expanded in ***Just*** mode.

Equally, you may prefer to select one of the other modes available to view the picture.

Panasonic Auto

'WIDE' appears in the top left of the screen, ***Panasonic Auto*** switches into 16:9 widescreen ratio.

Panasonic Auto

'Panasonic Auto' appears in the top left of the screen. The best ratio is chosen and the picture expanded to fill the screen.

Panasonic Auto

'Panasonic Auto' appears in the top left of the screen. The picture is displayed in ***Just*** or ***4:3*** mode, red and green keys appear, allowing switching between ***Just*** and ***4:3*** modes.

Notes:

- If, in ***Panasonic Auto*** mode, you experience problems with the screen display size when playing back widescreen format recordings from your VCR then it is possible that the tracking control of your VCR requires adjustment (your VCR instruction book will contain adjustment details).
- The widescreen aspect ratios of different films and programmes can vary. If these are wider than a standard 16:9 aspect picture then a black band may be visible at the top and bottom of the screen.

4:3

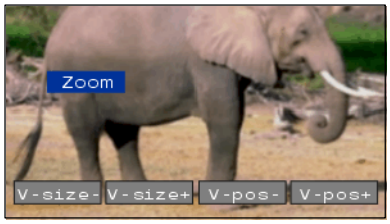
4:3 will display a 4:3 picture at its standard 4:3 size without any stretching. Black stripes will be visible down the left and right sides of the picture.

4:3

Zoom

Zoom mode magnifies the central section of the picture.
Press the red or green buttons to enlarge the picture vertically. Press the yellow or blue buttons to move the picture vertically (useful when there are sub–titles positioned below the picture).

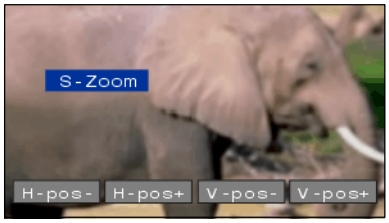
Zoom



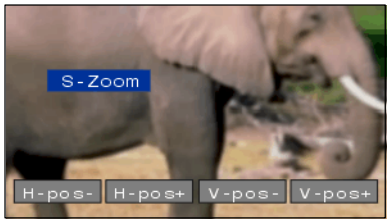
Blue button has been pressed to move picture upwards

S–Zoom

S–Zoom displays the picture at a greater magnification than ***Zoom*** mode does.
Press the red or green buttons to move the picture horizontally. Press the yellow or blue buttons to move the picture vertically.



S–Zoom



Blue button has been pressed to move picture upwards

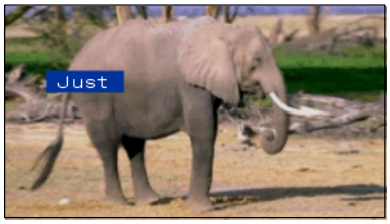
16:9

16:9 will display the picture at its maximum size but with slight stretching.

16:9

Just

Use this mode when you wish to expand a 4:3 picture to fill the whole screen (rather than watching a programme with black stripes down the left and right sides of the picture). The 4:3 picture will be stretched horizontally so that the image fills the screen, this is done in such a way that the stretching is only obvious at the left and right edges of the screen.



Just

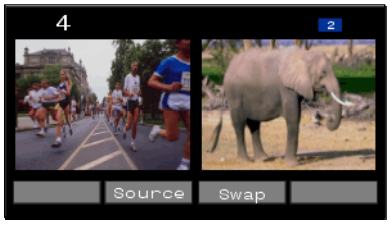
Multi window

Press the ***MULTI WINDOW*** button (whilst the on screen selector keys are on screen) to move between watching the current programme, the ***picture in picture*** feature, ***picture out of picture*** and ***picture and picture*** feature.

The on screen selector keys (corresponding to the four coloured buttons on the remote control) that appear for the features clear after a few seconds. If you want to select an operation when the keys are not shown, press the ***MULTI WINDOW*** button once more and the keys will reappear.

Picture and picture

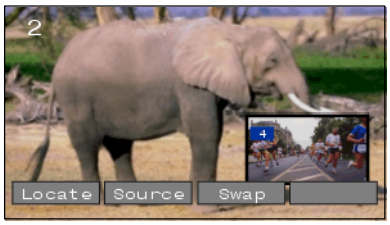
Allows two pictures to be viewed at the same time. Press the green button to select the contents of the right window, switching between displaying a TV channel and all AV sources in turn. To change the TV channel: press the green key until the currently selected TV channel is shown, then use the remote control to change channel (while the on screen selector keys are still displayed).
Press the yellow button to swap the contents of the two windows.
Use the remote control to select a TV channel or an AV source to appear in the left window.



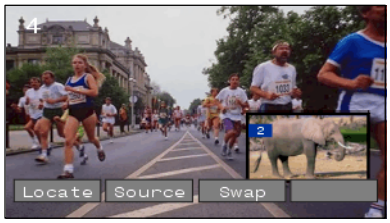
Picture and picture mode

Picture in picture

Allows two pictures to be viewed at the same time. Press the green button to select the contents of the smaller window, switching between displaying a TV channel and all AV sources in turn. To change the TV channel: press the green key until the currently selected TV channel is shown, then use the remote control to change channel (while the on screen selector keys are still displayed).
Press the red button to reposition the smaller picture on screen.
Press the yellow button to swap the contents of the two windows.
Use the remote control to select a TV channel or an AV source to appear in the main window.



Picture in picture mode



The two programmes have been swapped, the programme in the smaller window has become the main window programme.

Picture out of picture

Only available in ***4:3*** aspect mode, this feature allows two programmes to be viewed at the same time, as ***picture in picture*** does. The difference is how the two programmes are displayed: in ***picture in picture*** the smaller window appears within the main image; in ***picture out of picture*** the smaller window appears to the right of the main image.
Press the green button to select the contents of the smaller window, switching between displaying a TV channel and all AV sources in turn. To change the TV channel: press the green key until the currently selected TV channel is shown, then use the remote control to change channel (while the on screen selector keys are still displayed).
Press the yellow button to swap the contents of the two windows.
Use the remote control to select a TV channel or an AV source to appear in the main window.

Picture out of picture mode

INDEX
CH SEARCH

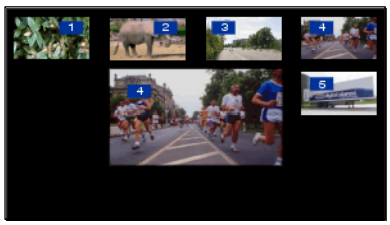
Channel search

Press the ***CH SEARCH*** button to show freeze–frames of the programmes being broadcast on all of the stored channels. These images are displayed in series clockwise around the edge of the screen, starting from the top left. The current programme is displayed in the centre of the screen, still playing.
The feature cycles through the stored channels until either the ***STILL*** key is pressed to pause the search or the ***CH SEARCH*** button is pressed to exit the feature.
Press the red button to select each channel's freeze–frame in turn.
Press the green button to watch the selected channel, exiting the feature.
Press the blue button to watch the current programme (displayed centre screen), exiting the feature.

INDEX
CH SEARCH

HOLD
STILL

INDEX
CH SEARCH



Channel search

TV/TEXT

Picture and text

Press the ***TELETEXT*** button to move between watching the current programme, viewing teletext and the ***picture and text*** feature. ***picture and text*** lets you see the current programme and a page of teletext side by side.
Whilst using this feature, the remote control affects the teletext page; if you wish to make changes to the programme viewed press the ***TELETEXT*** button to return to watching the programme on its own then make the desired changes.

TV/TEXT

TELETEXT mode

Picture and text mode

HOLD
STILL

Still

Press to freeze the picture, press again to return to watching the current programme.

HOLD
STILL

Strobe

(Access ***Strobe*** via the ***Setup*** menu, see page 10).
Takes a series of freeze–frame images (one second delay between each image being taken) from the current programme watched, these are displayed in series clockwise around the edge of the screen, starting from the top left. The current programme is displayed in the centre of the screen, still playing.
To pause (freeze) ***Strobe***, press the ***STILL*** button on the remote control, press again to continue taking the freeze–frames. To exit the ***Strobe*** feature and return to watching the current programme, press any button on the remote control other than ***STILL***.

Strobe mode

HOLD
STILL

This is a ***Q–Link*** TV. Q–Link, NEXTVIEWLINK and similar technology provide a way for a TV and VCR to communicate, making it easier to record programmes. In order to be able to exchange information both the TV and the VCR must be fitted with this technology, and must be connected with a SCART lead (full function type) between the AV2 socket of the TV and the appropriate socket on the VCR (see the VCR instruction book for details).

Q–Link lets your TV instruct a ***compatible VCR*** to record the programme currently shown on screen, no matter what programme position is set on the VCR. In order to make use of ***Q–Link***, ensure that the ***Q–Link*** option is set to ***On*** in the ***SETUP*** menu:

Press the ***SETUP*** menu button

Move to ***Q–Link*** option

Confirm ***Q–Link*** option is set to ***On***

Press the ***TV/AV*** button at any time to go back to watching TV.

Press the DIRECT TV REC button

Notes:

- If the VCR is off, it will automatically switch on when you press the ***DIRECT TV REC*** button.
- To ensure correct recordings are made, the television and VCR should share tuning information (see page 13).
- Whenever the Auto setup function is used, tuning data will be downloaded to the VCR (see page 14).
- If at any time you wish to turn off the ***Q–Link*** feature, follow the above procedure to get to the ***Q–Link*** menu option, then set the option to ***Off.***

A message, sent from the VCR, will appear on screen showing what is being recorded, or if it is not possible to record:

VCR recording preset prog	VCR is recording the programme signal from its own tuner. If you wish you can switch off the TV and leave the VCR recording in the normal way.
VCR recording TV source	VCR is recording the programme signal from the television. You must not change programme position or switch off the TV: if you do, the VCR will automatically stop recording and switch off.
No recording TAPE IS PROTECTED	The write protection tab on the back of the cassette has been removed.
No recording NO TAPE **No recording TAPE MAY BE DAMAGED**	Examples of other messages that might be displayed.

Notes:

- With Panasonic Q–Link VCRs these additional features are available:
  - If you insert a tape in your VCR and press the Play button, the television will automatically switch on and select the AV2 input so you can view the tape.
  - If you switch off the television whilst the VCR is in Stop, Fast Forward or Rewind modes, the VCR will switch off automatically.
- Not all VCRs support this technology. Some may support certain features, but not others. See the VCR instruction book for details**.**
- If Q–Link is inoperative, first confirm that your SCART lead is a full function type. Ask your dealer for further details.

VCR / DVD operation

The Remote Control is capable of operating some functions of selected Panasonic VCRs and DVD (Digital Versatile Disc) equipment. Some VCR and DVD equipment have different functions, so to ensure compatibility please refer to the equipment's instruction book or consult your dealer for details.

DVD VCR

Standby

Press to switch the VCR or DVD to standby mode. Press again to switch back on.

VCR / DVD switch

Use this switch to select whether controls operate DVD equipment or your VCR.

Play

Press to playback the tape or DVD.

Stop

Press to stop the tape or DVD.

Skip / Fast Forward / Cue

VCR: Press to fast forward the tape. In Play mode, press to view the picture rapidly forward (Cue).
DVD: Press once to skip to the next track.

Skip / Rewind / Review

VCR: Press to rewind the tape. In Play mode, press to view the picture rapidly in reverse (Review).
DVD: Press once to skip to the previous track.

Pause / Still

Press in playback mode, the picture will pause. Press again to restart play.

Programme Up / Down

Press to increase or decrease the VCR programme position by one.

REC

Record

Press this button to start recording.

- Teletext features may vary depending on the Broadcasting Companies and is only available if the channel selected is transmitting Teletext.
- Pressing the Picture button whilst in Teletext operation will display the contrast function with a cyan bar, press A " to alter the setting as required.
- Pressing the Setup button whilst in Teletext operation will display special function options at the bottom of the screen.
- Pressing the Sound button whilst in Teletext operation will display the volume function with a green bar, press A " to alter the setting as required.

What is LIST mode ?

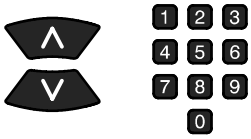
In LIST mode, four differently coloured page numbers are situated at the bottom of the screen. Each of these numbers can be altered and stored in the TV's memory.

What is FLOF?

In FLOF mode, four differently coloured subjects are situated at the bottom of the display. To access more information about one of these subjects, press the appropriately coloured button. This facility enables fast access to information on the subjects shown.

TV / Teletext mode

Press the ***TELETEXT*** button to switch between the current programme, teletext and the ***picture and text*** feature (lets you see the current programme and teletext side by side, see page 19).



Page Selection

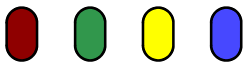
Pages can be selected in two ways :
a. Press the Up / Down buttons to increase or decrease the page number by one.
b. By entering the page number, using 0 –9 on the remote control.

Full / Top / Bottom

Press the **SET UP** button to display special functions, followed by the **Green** button.
Press the **Green** button again to expand the BOTTOM half.
Press again to return to normal (FULL) size.

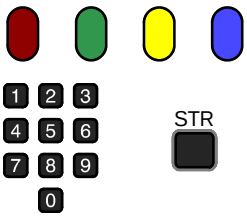
Reveal

Press the **SET UP** button to display special functions, followed by the **Red** button to reveal hidden words e.g. quiz page answers. Press again to hide.



Red / Green / Yellow / Blue buttons

In FLOF mode these correspond to the differently coloured subjects.
In LIST mode they correspond to the differently coloured page numbers.



List Store

In LIST mode the four page numbers can be altered (programme positions 1 – 25 only).
To do this, press one of the four coloured buttons and enter the new page number.
Press and hold **STR**, the page numbers will change to white indicating that the page is stored.

Hold

To hold the Teletext page when viewing multi–page information.
Press again to return to automatic page update.

It is not possible to change the programme position when in News flash, Update or Sub Coded Page Access operation.

Favourite Page (F.P.)

Stores a favourite page in memory for instant recall. To store such a page, the TV must be in LIST mode, and the programme position must be from 1 – 25.
Press the **Blue** button, select the page number, then press and hold the **STR** button. The page number is now stored.

Press **F.P.** to recall this page.

Update Display

Press the **SET UP** button to display special functions, followed by the **Yellow** button to view the TV picture whilst searching for a Teletext page (this is not necessary in ***picture and text*** mode, as the picture is displayed on the left of the screen)
When found, the screen will display the page number at the top left.
Press the **Yellow** button to view the page.
Press **TV / TEXT** again to return to normal TV operation.

News Flash
When a news flash page has been selected, press **SET UP**, **Yellow**, to view the TV picture.
When an update is received, the page number will be displayed on screen.
Press the **Yellow** button to display the News Flash
Press **TV / TEXT** to return to normal TV. operation.

Update
Press **SET UP**, **Yellow** to see the update of information on certain pages.
When an update is received, the page number will be displayed at the top left of the screen.
Press the **Yellow** button to view the page.
Press **TV / TEXT** to return to normal TV operation.

Accessing sub pages

When Teletext information exceeds one page, it may take some time for the automatic changing of the sub pages to reach the sub page you require. As each sub page is found its number is displayed at the top of the page so that you may select it; as more sub pages are picked up, the display at the top of the page changes, so that you are always offered the most recently transmitted selection of sub pages.

In ***picture and text*** mode, use the left and right cursor buttons to select a sub page from the range displayed at the top of the Teletext window.

In Teletext operation, use the following procedure to access sub pages:

If the sub page you want to look at is not yet available, press the ***SETUP*** button (to display special functions) followed by the ***Yellow*** button to view the TV picture whilst waiting for more sub pages to be found. The sub pages found will be displayed across the top of the screen.

When the sub page you are waiting for is available press the **Yellow** button to return to viewing the Teletext pages, then use the left and right cursor buttons to select the sub page of your choice.

Notes:

- If you do not want the four coloured special function keys to be displayed on the TV picture while waiting for a sub page to be found, press either the ***PICTURE***, ***SOUND*** or ***SETUP*** menu button to clear the keys from the screen. Press the ***SETUP*** key once more to redisplay the keys.
- If you have cleared the special function keys from the screen and then used the left and right cursor buttons to select a sub page, whilst still viewing the TV picture, you must press the ***SETUP*** button then the ***Yellow*** button to display the Teletext page again.
- If the top of the page indicates that sub pages are being transmitted but the page displayed never changes, then the 'sub page number' is there to show the page contents have been updated, there are no sub pages.

Press ***TV/TEXT*** to return to normal TV operation.

Index

When in FLOF operation
Press **INDEX** to return to the main index page.
Depending on the way information is transmitted, this may have to be pressed more than once to return to the main index page.

Surround sound systems

Stereo reproduction normally uses left and right speakers, but Digital Theater Systems (DTS), Dolby Digital and Dolby Pro Logic Surround go further, adding a centre and other channels so you are immersed in sound and special effects.

Digital Theater Systems (DTS) / Dolby Digital

Both DTS and Dolby Digital split soundtrack information into 6 separate channels of sound which are output through the speaker setup: five full range channels (left, centre, right, stereo left and right surround) and a '0.1' (ie: limited range) bass channel. This gives you superb sound quality from DTS / Dolby Digital encoded tracks when a compatible speaker system is connected to your TV.

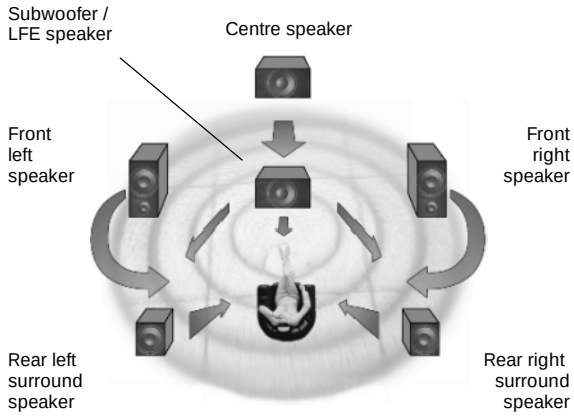
Most dialogue comes from the centre channel, which enhances dialogue and focuses it so it seems to come from the action on screen. The separate rear left and right channels give a dramatic sense of space, with sounds travelling in all directions between front, centre and rear channel speakers (eg: a rocket going overhead starts behind you to the left and explodes in front of you to the right). The '0.1' Low Frequency Effects (LFE) channel gives impact to bass sounds and to special effects more felt than heard (eg: the thud of a dinosaur footfall or the rumble of thunder).

While DTS and Dolby Digital are both high quality, '5.1' channel surround systems, the two systems differ in how they break down and store sound information.

They also differ in how they work with existing speaker setups: Dolby Digital has been developed to be backwardly compatible with Dolby Pro Logic and conventional stereo setups. DTS, on the other hand, focuses on the high quality, 5.1 channel surround output; choosing not to develop backward compatibility with existing sound systems.

Note:

- External equipment is usually connected to the TV via one of the Scart sockets to provide pictures and sound (eg: a VCR player connected to AV2). To receive a DTS or Dolby Digital encoded soundtrack from compatible equipment (eg: a DVD player, a set top box), you will also need to connect an optical or coaxial cable to one of the TVs digital audio sockets. See pages 27 to 28 for connection details, also see the ***Digital Audio*** option in the ***SOUND*** menu, page 9.



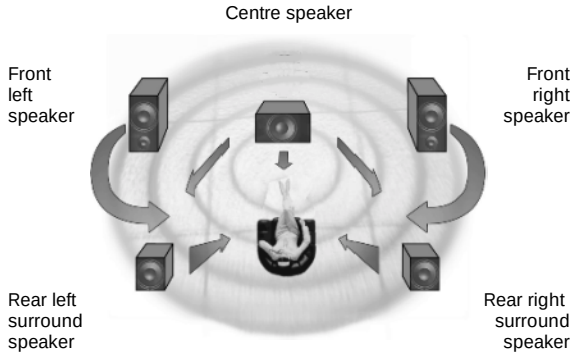
Dolby Pro Logic

Dolby Pro Logic Surround uses four channels of sound: left, right, centre and a mono rear channel, giving excellent reproduction of Pro Logic encoded tracks when a compatible speaker system is connected to your TV. Most dialogue comes from the centre channel, which enhances dialogue and focuses it so it seems to come from the action on screen. The rear channel is used to immerse you in atmosphere and special effects, the same output is sent to both rear speakers.

As with Dolby Digital, Pro Logic is backwardly compatible with a conventional stereo speaker setup.

Notes:

- To get Pro Logic information from Pro Logic encoded TV programmes, you must be able to receive stereo transmissions. If stereo transmissions are not transmitted in your area then the Pro Logic information will not be present on TV transmissions and Pro Logic decoding will only produce a centre channel output.
- See pages 27 to 28 for connection details.



Surround menu

Press the ***SOUND*** menu button

Move to ***Surround menu*** option

Access ***Surround menu***

Move to chosen menu option

Adjust chosen option or access chosen menu

Press the ***TV/AV*** button at any time to go back to watching TV

If a DTS / Dolby Digital input is detected the ***Surround menu*** options instantly change – ***Surround mode*** is not available. Ensure that the ***Digital Audio*** option in the ***SOUND*** menu is set to the correct AV input (see page 9 for details). A message displayed in the centre of the screen shows whether the signal is DTS or Dolby Digital, and gives a code indicating which channels are detected (see table to the right). Subwoofer output is not listed; if a subwoofer channel is detected then its contents are output, (the subwoofer output level can be adjusted or the subwoofer turned off via the subwoofer option in the SOUND menu – see page 9 for details).

Code	Front outputs			Rear surround outputs	
	Left	Right	Centre	Left	Right
1+1	Dual mono output				
1/0	Mono output				
2/0	n	n			
3/0	n	n	n		
2/1	n	n		Mono output	
3/1	n	n	n	Mono output	
2/2	n	n		n	n
3/2	n	n	n	n	n

Volume — The volume adjustment sets the overall Surround output volume.

Surround mode — When a DTS / Dolby Digital input is not detected this option is shown. Choose between ***Pro Logic*** and ***Simulated***. The mode chosen here dictates the next menu option.

Speaker setting / Simulated setting — If a DTS / Dolby Digital input is detected, or if ***Pro Logic*** is selected in ***Surround mode***, this menu option is ***Speaker setting,*** allowing selection of ***Normal***, ***Phantom*** or ***3 Stereo*** modes, as described on page 26.
If ***Simulated*** is selected in ***Surround mode***, this menu option is ***Simulated setting***, allowing selection of ***Disco***, ***Movie*** or ***Stadium*** modes, as described on page 26.

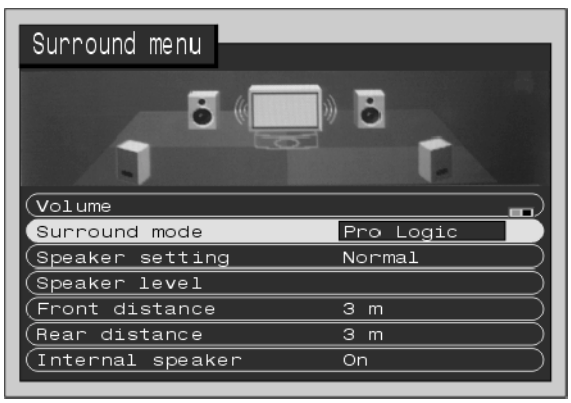
Speaker level — Allows adjustment of the volume for each speaker, as described on page 26.

Front distance — Allows setting of the distance from the listening position to the front speakers.

Rear distance — Allows setting of the distance from the listening position to the rear speakers. If the rear surround speakers are closer to you than the centre speaker, you may hear dialogue "leakage" from the rear surround speakers. It may be necessary to reduce the volume of the rear speakers.

Internal speaker — If you do not have an external centre speaker connected, set to ***On.*** If you wish to connect an external centre speaker then switch ***Off***, see page 30 for connection details.

If a DTS / Dolby Digital input is detected, the ***Surround menu*** is as shown above (no ***Surround mode*** available).



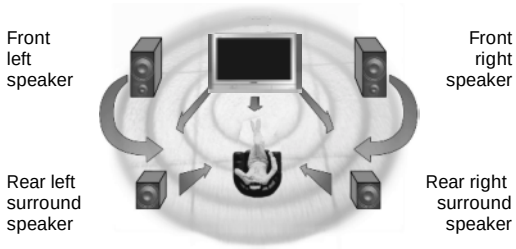
If no DTS / Dolby Digital input is detected, ***Surround mode*** appears as a menu option.

DTS / Dolby Digital and Pro Logic modes

With a DTS / Dolby Digital input or if ***Pro Logic*** is selected in ***Surround mode***, the following three modes of operation are available as the ***Speaker setting***: ***Normal***, ***Phantom***, ***3 Stereo*****.**

Normal

If front and rear speakers are connected, use ***Normal*** mode. Centre speaker information will be produced by the TV's internal left and right speakers. With a DTS / Dolby Digital 5.1 input, the subwoofer/LFE speaker information is produced by the TV's internal subwoofer. If the internal speaker is switched off (see page 25) and an external centre speaker used, the speaker must be connected using RCA cables, via an external amplifier (otherwise it will not output any sound). See page 30 for connection details.



Normal mode

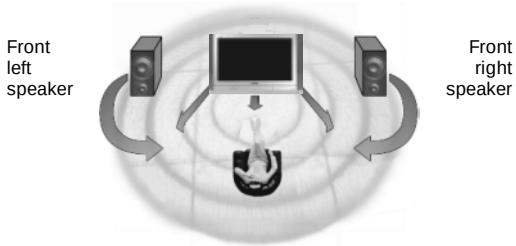
Phantom

If external front left and right speakers are not connected, use ***Phantom*** mode. Left, right, and centre information will now be produced by the TV speakers. If you choose to use this mode with the internal speaker switched off and front left and right speakers connected, these must be connected using RCA cables, via an external amplifier (otherwise they will not output any sound). See page 30 for connection details

Phantom mode

3 Stereo

This is the best mode to use if rear speakers are not connected. When using this mode, the rear left and right surround information is redirected to the front left and right speakers. Centre information is output by the TV's internal speakers. If the internal speaker is switched off (see page 25) and an external centre speaker used, it must be connected to the TV using RCA cables, via an external amplifier (otherwise it will not output any sound). See page 30 for connection details.



3 Stereo mode

Simulated mode

Simulated surround modes allow various types of surround effects to be produced by mimicking both the direct sound, as heard by the audience, and the sound reflected back from the surrounding walls e.g. ceiling and floor space in a space such as a disco. There are three different effects to choose from, each reflecting a different atmosphere:

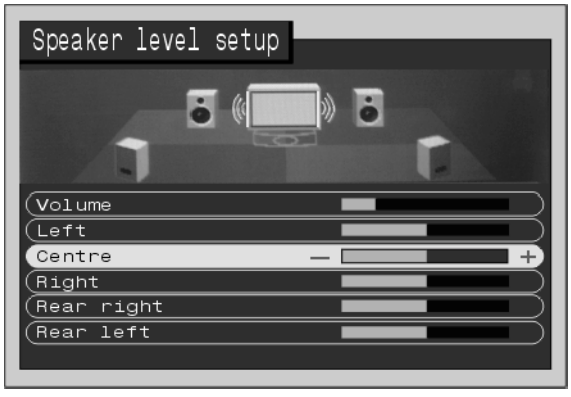
Setting	Appropriate sources	Effect
Disco	Disco, dance or jazz music	A crowded nightclub
Movie	All movies or music software recorded without Dolby Surround	Simulates a surround sound recording
Stadium	Any live sports occasion	A packed sports stadium

Speaker level setup

The speaker output levels from the different options, eg: ***Left***, ***Centre***, ***Right***, ***Rear left*** and ***Rear right***, should be adjusted from your usual listening position, to obtain the best results. The level can be set using either the TV sound or the provided test signal.

Notes:

- The adjustments available will vary according to the mode chosen.
- If you have a DTS / Dolby Digital 5.1 input, and are using the internal subwoofer to produce the subwoofer/LFE information, you can change the subwoofer/LFE volume by altering the ***Subwoofer*** setting in the ***SOUND*** menu. See page 9.
- When using external stereo equipment, it is advisable to set the speaker levels to the midpoint position.



Speaker level setup – ***Pro Logic*** mode

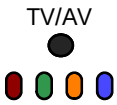
Audio / video connections

It is possible to connect a variety of additional equipment to this TV. The following pages detail how to connect external equipment to both the front and rear of the TV.

Once your equipment is connected, use the following procedure to view the input:

Press the ***TV/AV*** menu button

Press the relevant on screen selector key to select the AV source you wish to view (for example, press the green button to select ***AV2*** if you have connected a video recorder to the AV2 SCART socket).
The on screen selector keys that appear clear after a few seconds. If you want to select an input when the keys are not shown, press the ***TV/AV*** key once more and the keys will reappear.



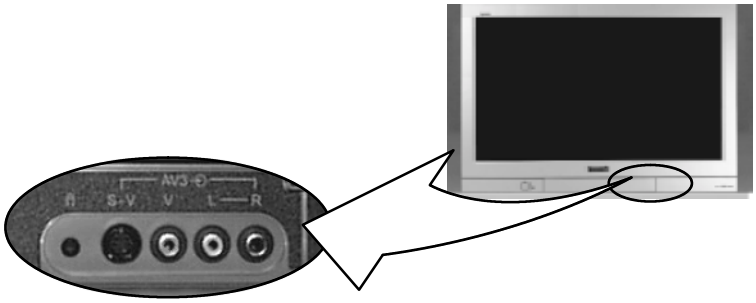
Notes:

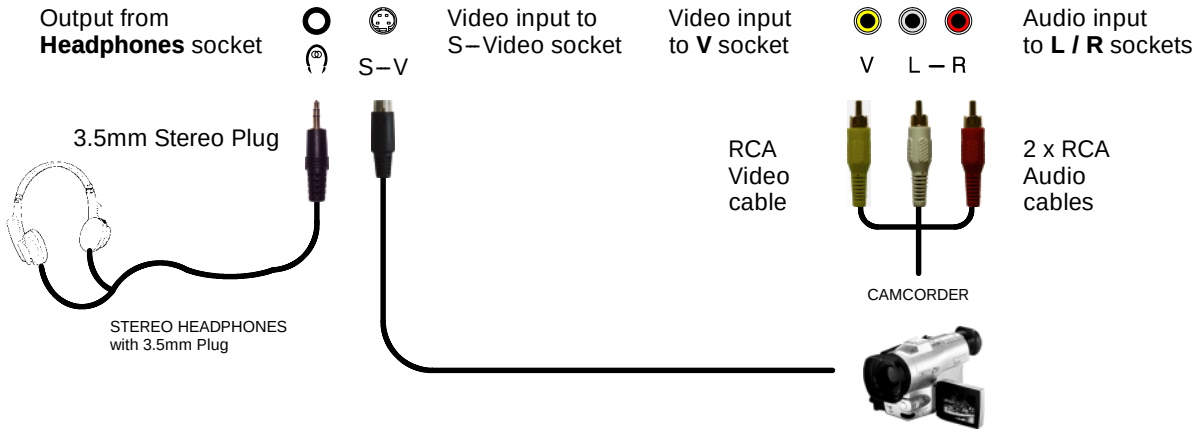
- You can also select an AV source using the ***TV/AV*** button on the control panel on the front of your TV.
  Press the ***TV/AV*** button repeatedly until you reach the AV source you wish to view.

- When in ***AV mode*** a reduced number of options are available in the ***SOUND*** and ***SETUP*** menus (eg: in the Setup menu there is no ***Tuning menu*** option).

Front sockets

Additional equipment can be connected at the front of the TV via a 4 pin S–Video socket (AV3), RCA Audio / Video sockets (AV3) and a headphone socket.



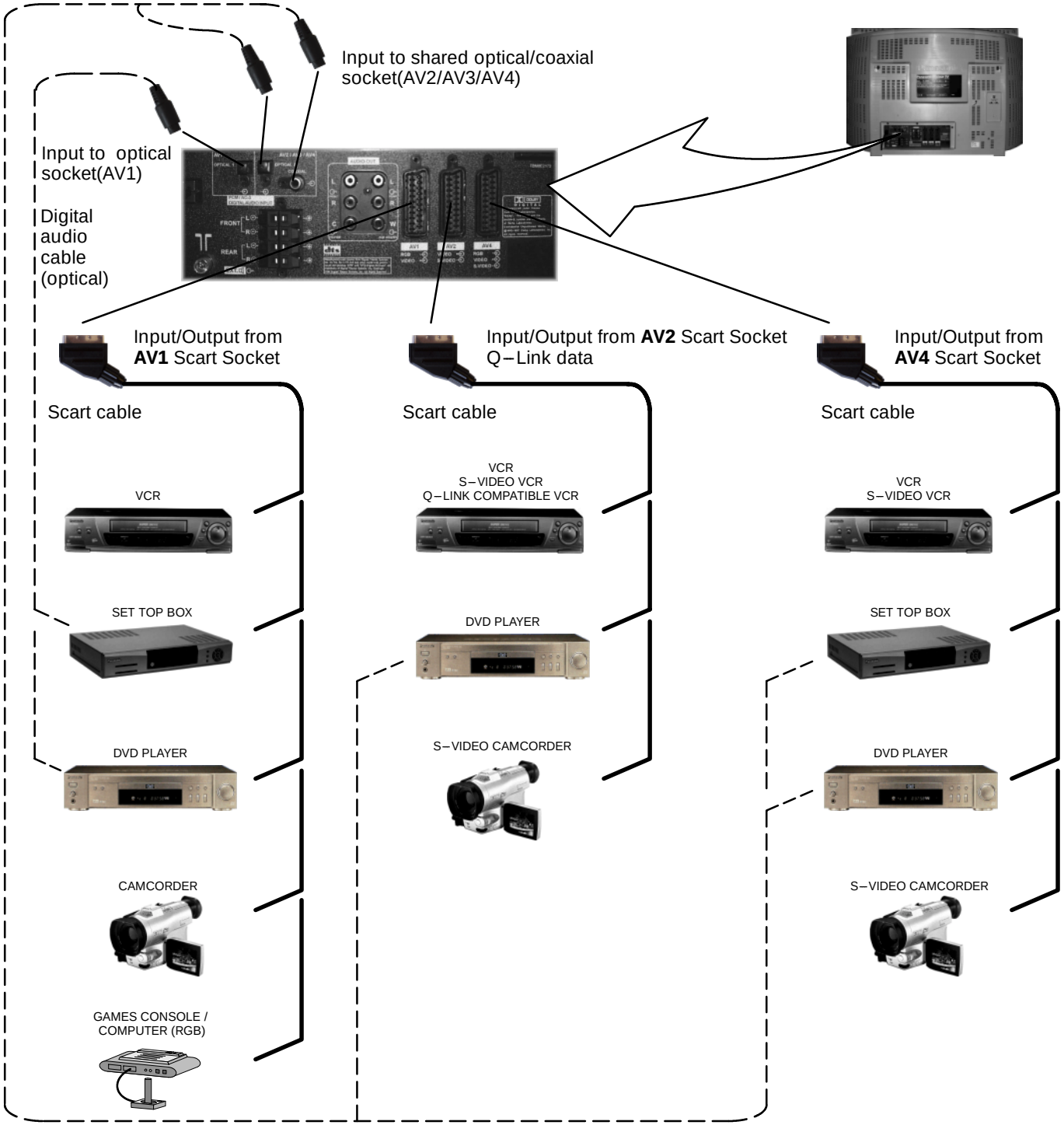


Notes:

- Additional equipment and cables shown are not supplied with this TV set.
- For S–Video socket wiring information see page 32.

Rear sockets

Additional equipment can be connected at the rear of the TV via three 21 pin Scart sockets, AV1 / AV2(S) / AV4(S), and via two digital audio sockets (one optical input for AV1 only and one shared optical/coaxial input for AV2, AV3 and AV4).

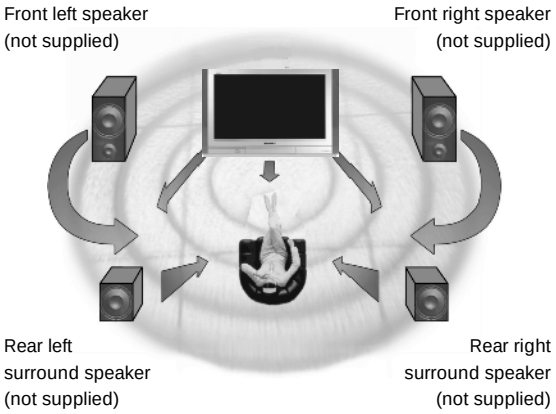


Notes:

- Additional equipment and cables shown are not supplied with this TV set.
- Do not connect a computer with TTL output (5V) to this set.
- The AV2 21 pin socket can also be used as an output to Audio/Video equipment; see page 10 for details.
- For Scart socket wiring information see page 32.
- When connecting an optical cable to an optical socket, remove the socket cover before inserting the cable plug.
- We recommend that only one Digital Audio Input (either coaxial or optical) be connected to the shared optical/coaxial input of the TV at a time. If there is a coaxial and an optical input connected at the same time, the coaxial input will override the optical input – the sound from the coaxial input will be heard.

The external speaker connections (***EXT***) on the rear of the TV allow you to create your own system using external speakers. Connections are provided for front and rear speakers.

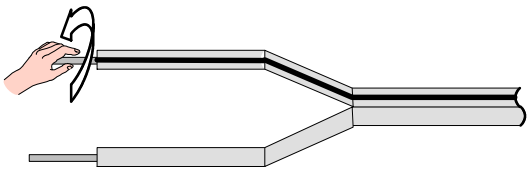
You may decide, for example, to connect external front left and right speakers and rear left and right surround speakers; as shown here:



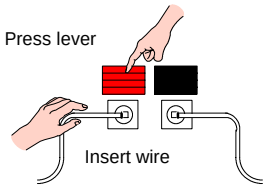
Connecting external speakers

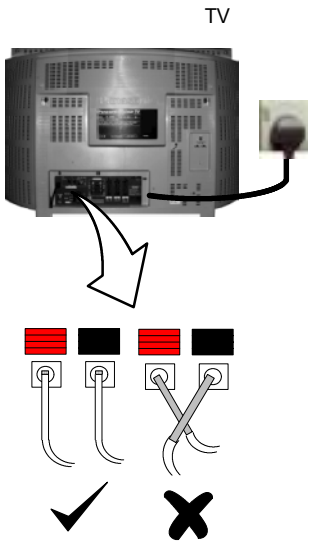
The TV must be switched ***Off*** before connecting external equipment.

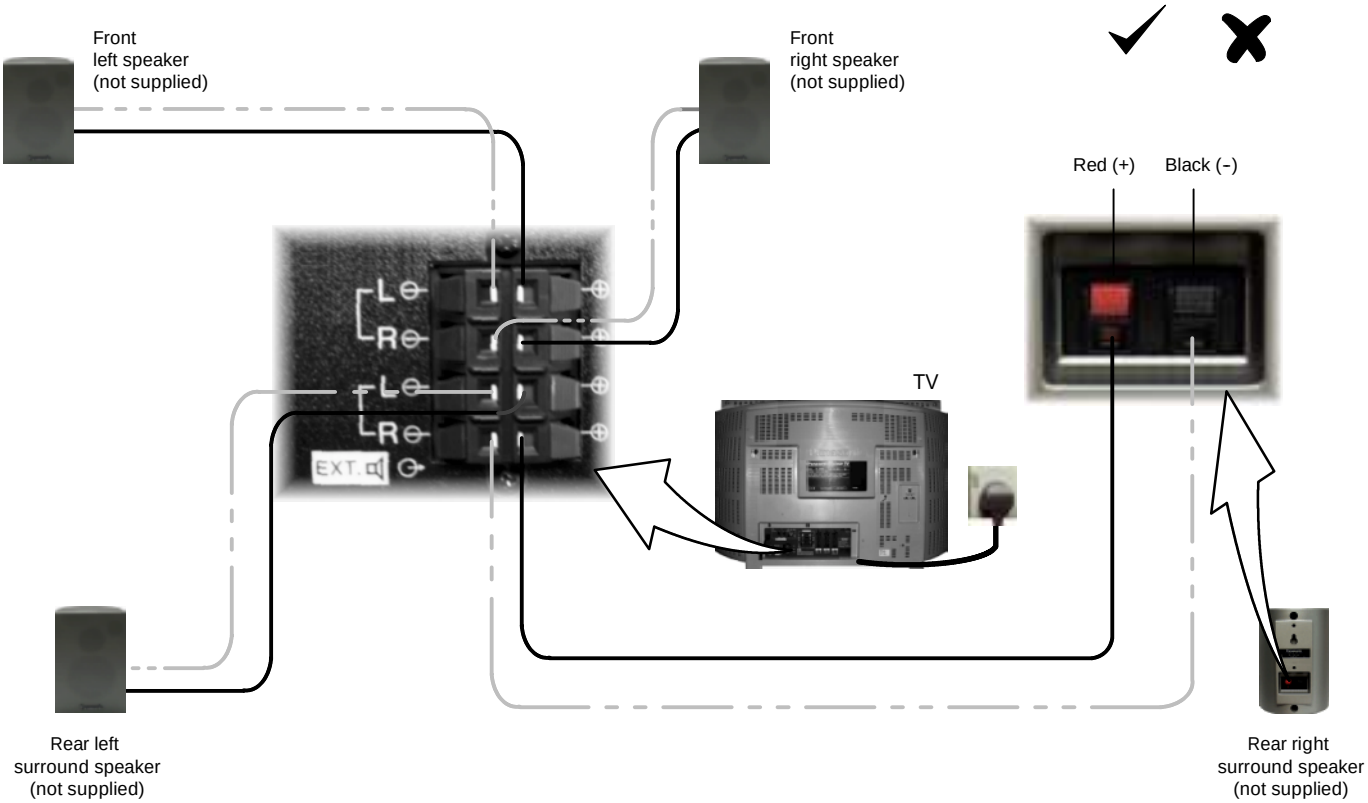
1 Twist the wire ends before inserting.



2 Insert into terminals. Ensure that bare speaker wires are not touching.

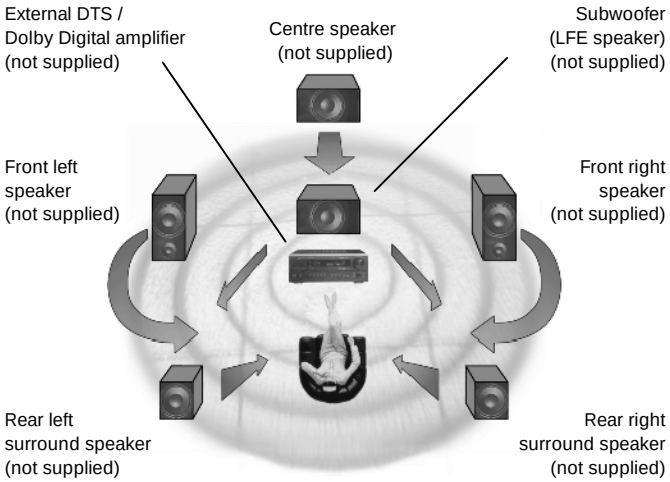




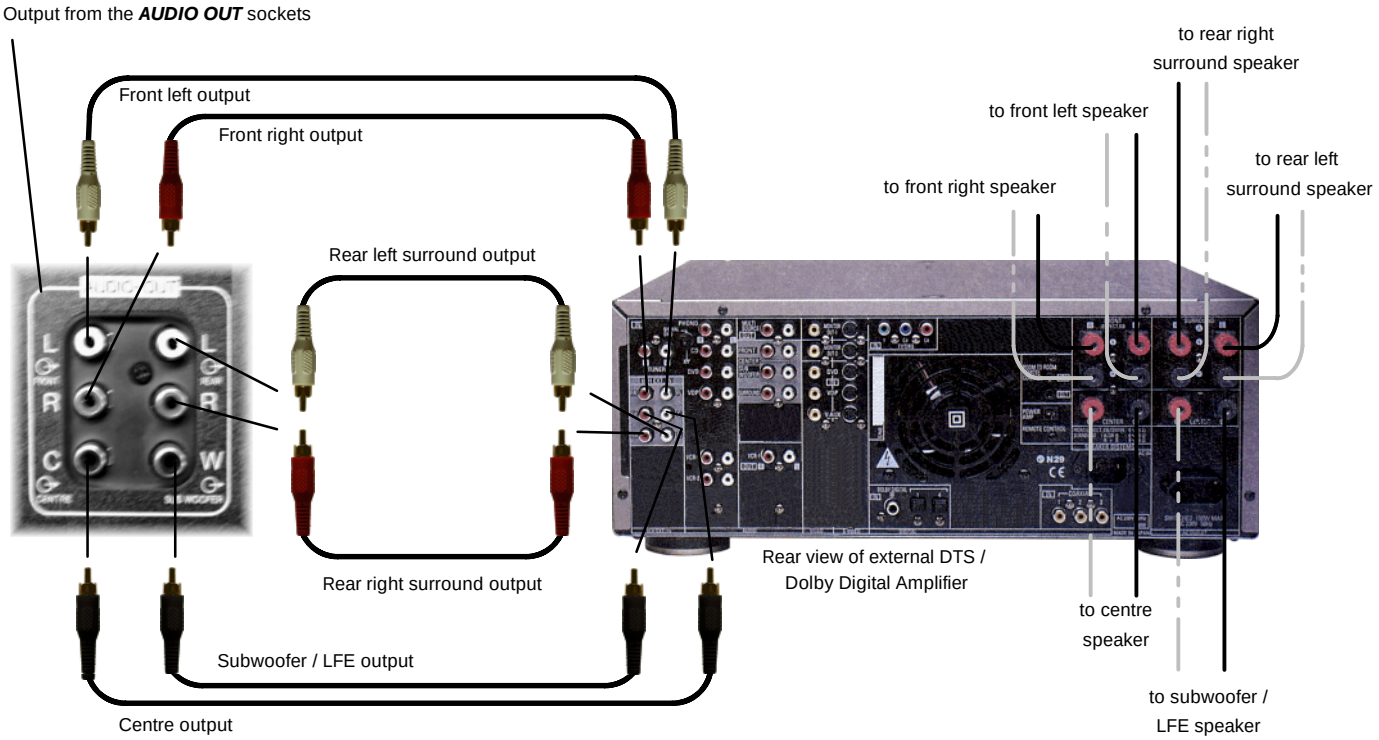


The ***AUDIO OUT*** sockets on the rear of the TV allow you to create a custom sound system using an external amplifier and external speakers.

You may decide, for example, to use an external DTS / Dolby Digital amplifier to connect external front left and right speakers, rear left and right surround speakers, a centre speaker and a subwoofer (LFE speaker); as shown here:


External DTS / Dolby Digital amplifier (not supplied)
Centre speaker (not supplied)
Subwoofer (LFE speaker) (not supplied)
Front left speaker (not supplied)
Front right speaker (not supplied)
Rear left surround speaker (not supplied)
Rear right surround speaker (not supplied)

Connecting external amplifiers and speakers

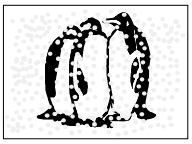
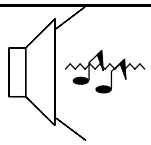
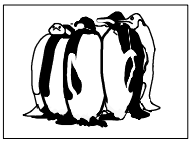
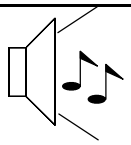
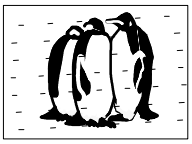
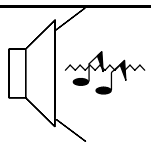
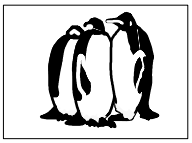
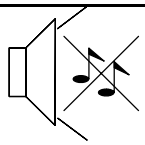
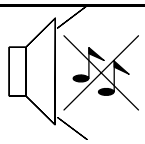
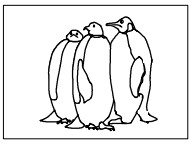
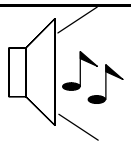
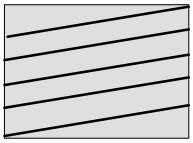
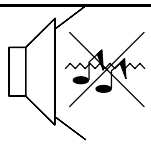
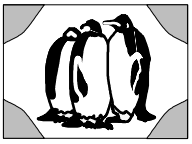
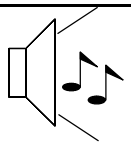
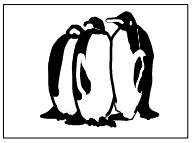
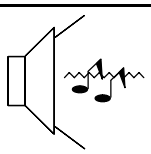

Output from the AUDIO OUT sockets
Front left output
Front right output
Rear left surround output
Rear right surround output
Subwoofer / LFE output
Centre output
to rear right surround speaker
to front left speaker
to front right speaker
to rear left surround speaker
Rear view of external DTS / Dolby Digital Amplifier
to centre speaker
to subwoofer / LFE speaker

Notes:

- See the DTS / Dolby Digital amplifier instruction book for speaker connection details**.**
- Connect each output to the corresponding input on the DTS / Dolby Digital amplifier. Use Phono (RCA) connectors (not supplied)

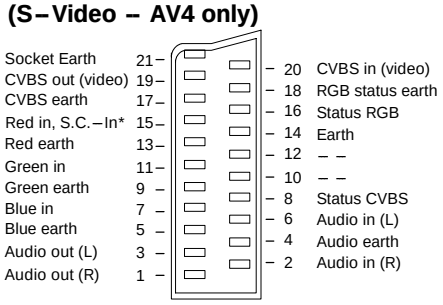
Troubleshooting

If there is a problem with your TV please refer to the table below to determine the symptoms, then carry out the suggested check. If this does not solve the problem, please contact your local Panasonic dealer, quoting the model number and serial number (both found on the rear of the TV).

Symptoms		Checks
Picture	**Sound**	
 Snowy Picture	 Noisy Sound	Aerial location, direction or connection
 Multiple Images	 Normal Sound	Aerial location, direction or connection
 Interference	 Noisy Sound	Electrical appliances Cars / Motorcycles Fluorescent lights Switch on P–NR in Picture menu to reduce picture noise
 Normal Picture	 No Sound	Volume level Sound mute switched on
No Picture	 No Sound	TV set to AV mode Not plugged into A.C. outlet Not switched on Picture / Sound controls set at minimum levels Check if in standby mode
 No Colour	 Normal Sound	Colour controls set at minimum levels
 Poor or Distorted Picture	 Weak or No Sound	Retune Channel(s)
 Coloured Patches	 Normal Sound	Magnetic Interference from unshielded equipment Receiver moved while switched ON, switch TV off for 30 minutes. If picture is also tilted, use Geomagnetic Correction feature (see Quick Start Guide, page 5)
 Normal Picture	 Weak or distorted sound	Sound reception may have deteriorated. Switch MPX setting (Sound menu) to Off until reception improves.

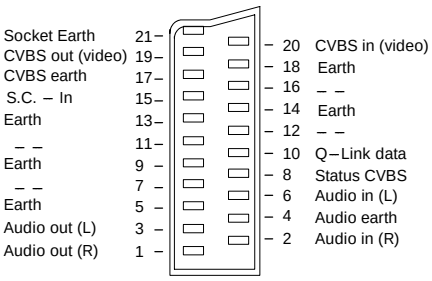
Scart and S–video socket information

AV1 / AV4 Scart socket (S–Video – AV4 only)



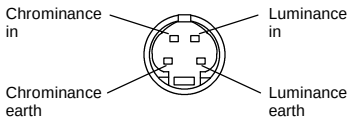
Suitable inputs for ***AV1 / AV4*** include RGB (Red/Green/Blue).
*S.C.–In***** : on Pin 15 'S.C.–In' only applies to ***AV4***.
AV4 – Pins 15 and 20 are dependent on AV4 S–VHS / VIDEO switching.

AV2 Scart socket (S–Video, Q–Link)



AV2 – Pins 15 and 20 are dependent on AV2 S–VHS / VIDEO switching.

S–Video 4 pin socket



Specifications

		TX–32PB50F	TX–28PB50F
Power Source		220 – 240V 50Hz a.c.	
Power Consumption		149W	145W
Standby Consumption		2.8W	
Picture Tube Visible Diagonal		76 cm	66 cm
Audio Output Music Power		Subwoofer 23W, Centre 20W x 2, External Left / Right 19W x 2, External Surround 19W x 2, 8Ω impedance	
Dimensions	H W D	558 mm 850 mm 549 mm	509 mm 763 mm 512 mm
Weight (Kg)		58.5	47.6
Receiving Systems/ Band name		**PAL B, G, H, I, SECAM B, G SECAM L/L'** VHF E2 – E12 / VHF H1 – H2 (ITALY) VHF A – H (ITALY) / UHF E21 – E69 CATV (S01 – S05) / CATV S1 – S10 (M1 – M10) CATV S11 – S20 (U1 – U10) / CATV S21 – S41 (Hyperband) **PAL D, K, SECAM D, K** VHF R1 – R2 / VHF R3 – R5 VHF R6 – R12 / UHF E21 – E69 **PAL 525/60** Playback of NTSC tape from some PAL video recorders (VCR) **M.NTSC** Playback from NTSC 4,43 MHz Videorecorders (VCR) **NTSC (AV input only)** Playback from NTSC Videorecorders (VCR)	
Aerial – Rear		UHF / VHF	
Headphones – Front		3,5mm, 8Ω impedance	
AV – Rear		**AV1** – 21 pin socket – Audio / Video in / out, RGB in **AV2** – 21 pin socket – Audio / Video in/out, S–Video in, Q–Link **AV4** – 21 pin socket – Audio / Video in / out, S–Video in, RGB in **DIGITAL AUDIO INPUTS** – Coaxial/Optical in, Optical in	
Dolby Surround Out – Rear		6 x Dolby Surround Out RCA External Speaker connections – 2 x Front, 2 x Rear	
AV – Front		**AV3 –** S–Video in, 1 x RCA Video in, 2 x RCA Audio in	

Specifications are subject to change without notice. Weight and dimensions shown are approximate.

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Manufactured under license from Digital Theater Systems, Inc. US Pat. No. 5,451,942 and other world–wide patents issued and pending. "DTS" and "DTS Digital Surround" are trademarks of Digital Theater Systems, Inc. Copyright 1996 Digital Theater Systems, Inc. All Rights Reserved.

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